GREENOUGH'S THEORY OF BEAUTY IN ARCHITECTURE*

HORATIO GREENOUGH was born in Boston, September 6, 1805, one of eleven children of a successful self-made man who dealt in real estate and built some of the houses in Colonnade Row. Horatio studied at Harvard in the early 1820's. This was evidently a difficult time in the history of the great university. He describes his education there in the following manner: "Fain would I also lay claim to the title of self-made man; indeed, I graduated at Harvard . . . which they who knew the school will allow was near enough self-making to satisfy any reasonable ambition."[1]

Greenough left before the end of his senior year for Italy, his diploma following after; he was determined to be a sculptor and could not begin too soon. He had encouragement from Washington Allston, and letters of introduction and recommendation to Thorwaldsen in Rome. In 1829 he set up a studio in Florence, where he became, "in a manner," as his brother Henry said, "a pupil of Bartolini," an Italian portrait sculptor whose work he admired; and in the course of the next twenty-two years, most of which he spent in Florence, he produced many portrait busts on commission, also full-lengths, and several imaginative groups, single figures and bas-reliefs. His sitters, abroad or at home, included John Quincy Adams, Lafayette, and James Fenimore Cooper. For Cooper he produced the "Chanting Cherubs," the first marble group from the chisel of an American artist. Allston wrote to Daniel Webster recommending Greenough to exe-

* A public lecture delivered at the Rice Institute on November 11, 1951.

cute a statue of George Washington for the government; Cooper and Edward Everett backed the recommendation, and the result was the seated figure, 11 feet 4 inches high, intended for the rotunda of the Capitol, which is now in the Smithsonian Institution. Greenough also executed for the Capitol the group entitled "The Rescue," an American colonial settler restraining an Indian from tomahawking a woman and her infant while a large dog stands inactively by, which adorns a buttress of the steps to the East Front door. With the exception of a few visits home, Greenough lived in Florence until the events of monarchic reaction sent him home in 1851.

Greenough counted among his friends the philosopher Emerson, who mentions him handsomely in *English Traits;* the novelist Cooper, the artist and inventor Samuel F. B. Morse, and many more among the American great and near-great of his day. His studio at Florence was frequently visited by travellers of consequence. He kept in touch with his homeland and did not regard himself as an expatriate. He died in Somerville, near Boston, December 18, 1852.

Greenough's life span is approximately the same as the period of the Classic or Greek Revival in American art. By European standards, Greenough is not ranked among the outstanding sculptors, but in addition to his numerous sculpture commissions, Greenough found time to write on the subjects of architecture, sculpture and painting.[2]

Bernard Berenson has aptly expressed a significant truth: He wrote, "Every generation has an innate sympathy for some epoch of the past wherein it seems to find itself foreshadowed."[3] Today Greenough is best known for his writings on architecture wherein he expressed many ideas which such modern architects as Sullivan, Wright, and Le Corbusier have also expressed. Greenough's ideas are preserved

in three books. In *The Travels, Observations, and Experience of a Yankee Stonecutter* (New York: G. P. Putnam, 1852), under the pseudonym of Horace Bender, Greenough presented a collection of his magazine and newspaper articles, squibs, and fragments. The *Memorial of Horatio Greenough* (New York: G. P. Putnam, 1853), edited by Henry T. Tuckerman, art critic, was issued soon after the sculptor's death. In the *Memorial,* much of the *Travels* is repeated, verbatim or with slight modifications, and some pieces are included which are not in the *Travels.* The third of the three Greenough books was published in 1947, by the University of California Press of Berkeley and Los Angeles, under the title *Form and Function, Remarks on Art by Horatio Greenough.* It was edited by Harold A. Small, with an introduction by Erle Loran. In general this new book faithfully renews the Tuckerman *Memorial.* Four essays are omitted as contributing little to the main theme, and printer's errors in the *Memorial,* antique spellings, punctuation, and stylistic particulars have been corrected. Mr. Small has also contributed notes and a bibliographical appendix. My quotations from Greenough are from *Form and Function.*

Greenough's ideas on architecture are impressively modern and come under the heading of what is now called "functionalism," a term used to denote adherence to the principle "form follows function," and the analogy between architectural and organic form.

Greenough wrote: "If there be any principle of structure more plainly inculcated in the works of the Creator than all others, it is the principle of unflinching adaptation of forms to functions. I believe that colors also, so far as we have discovered their chemical causes and affinities, are not less

organic in relation to the forms they invest than are those forms themselves." (Page 118.)

As Greenough looked upon God's organic creations he observed that form and color follow function. As Greenough looked upon God's organic creations he saw them as beautiful. He refused to admit that God had created an unbeautiful living thing. Even the most humble forms of life were beautiful to Greenough. Since Greenough accepted the principle of adaptation of forms to functions and the principle of perfect beauty in all of God's creatures, it was logical for him to connect beauty with function.

Greenough defined *beauty* as "the promise of function," *action* as "the presence of function," and *character* as "the record of function." These he acknowledged, are arbitrary divisions of that which is essentially one. They are the phases through which organized intention (or design) passes to completeness. They apply to the creations of mankind as well as the creations of God.

According to Greenough, the promise of function is made sensuously pleasing as a result of a God-given instinct. He offered a brief and poetic explanation of this. "The inchoate organic life needs a care and protection beyond its present means of payment. In order that we may respect instinctive action which is divine, our eyes are charmed by the aspect of infancy, and our hearts obedient to the command of a visible yet impotent volition." (Page 72.) It thus appears that beauty is not the *promise* of function so much as the way in which we react to it, but Greenough was not concerned whether beauty is a quality of objects or a mode of response to them because it did not appear as a problem to him.

Although beauty is the *promise* of function, Greenough

made it clear that it must not be confused with nonperformance. He regarded meaningless embellishment as a type of nonperformance. We read, "Not to promise forever, or to boast at the outset, not to shine and to seem, but to be and to act, is the glory of any coordination of parts for an object." (Page 73.)

As we shall see, Greenough acknowledged the validity of sculptural embellishment for certain types of architecture, but he regarded embellishment as false beauty when it tried to make up for or conceal defects in organization.

> The normal development of beauty is through action to completeness. The invariable development of embellishment and decoration is more embellishment and more decoration. The *reductio ad absurdum* is palpable enough at last; but where was the first downward step? I maintain that the first downward step was *the introduction of the first inorganic nonfunctioning element, whether of shape or color.* If I be told that such a system would produce *nakedness,* I accept the omen. In nakedness I behold the majesty of the essential instead of the trappings of pretension. (Page 75.)

Greenough regarded the human frame as "the most beautiful organization of earth, the exponent and minister of the highest being we immediately know." (Page 120.) In his admiration for the beauty of the unadorned human frame, he was clearly within the tradition of the Classic Revival.

Moral values in architectural criticism, such as were expounded by his contemporaries John Ruskin and Edward Lacy Garbett,[4] were not rejected by Greenough. For example, he agreed with Garbett that a house can look selfish. Morals and manners are (ideally at least) functional. They render the necessary unselfish by conforming it to the principle: the greatest good for the greatest number. Because of our moral outlook we regard the socially desirable as personally necessary. Therefore it is logically possible if not mandatory to combine the functionalist and moralist approach to archi-

tecture. Ruskin's "pupil," Garbett, did so, and Greenough saw no inconsistency in this. But Greenough insisted that immoral qualities such as selfishness and cruelty when they appear in architecture are *symptomatic* of bad organization or function. Conversely, moral qualities such as unselfishness are symptomatic of good organization or function. Unfortunately Greenough generally avoided the moral issue inherent in functionalism; hence he was not forced to resolve this interesting issue. The bulk of his writing was devoted to other subjects.

Greenough rejected all rules for good proportion, all principles of composition save one: study the manifold varieties of life and observe how the beauty of living things is a result of the adaptation of forms to functions. All beauty is relative. The proportions of one plant or animal cannot be transferred to that of another. Greenough did not recommend inanimate nature and avoided reference to it. It seems fair to assume that if the question of the beauty of inanimate forms did arise, Greenough would be forced to deny it, because without life there can be no adaptation of forms to functions. If a landscape possessed beauty it would be because of the living things contained in it, their presence or their creations.

Now let us turn to the problem of style. As we have previously observed, Greenough lived in an age in which the revival of Greek forms of architecture was fashionable, the period of the so-called Classical Revival style. Although he was a successful sculptor working within the Classical Revival discipline, he did not approve of the practice of copying Greek or Roman forms or of limiting one's study to the classic models. Instead, he saw beauty in the functional productions of all styles.

Greenough was ahead of his time in his enthusiastic ad-

miration for primitive implements. He also regarded as beautiful the early American farmhouses of New England which had become generally unpopular as a result of the influence of Thomas Jefferson and other classicists.

Greenough also praised the style-less beauty of engineered products such as machines, bridges, and sailing ships. He believed that if architects had but eyes to see they could learn a lesson in design by studying the development of machines. "If we compare the form of a newly invented machine with the perfected type of the same instrument, we observe, as we trace it through the phases of improvement, how weight is shaken off where strength is less needed, how functions are made to approach without impeding each other, how straight becomes curved, and the curve is straightened till the straggling and cumbersome machine becomes the compact, effective, and beautiful engine." (Page 59.)

In his praise for the American construction of bridges he observed that they are not designed according to authoritarian principles or rules for good form, but are the result of good practical sense. He saw in the majesty of a sailing ship an organization second only to that of an animal. "What academy of design, what research of connoisseurship, what imitation of the Greeks produced this marvel of construction?" asked Greenough. "Here is the result of the study of man upon the great deep, where Nature spake of the laws of building, not in the feather and in the flower, but in winds and waves, and he bent all his mind to hear and to obey. Could we carry into our civil architecture the responsibilities that weigh upon our shipbuilding, we should ere long have edifices as superior to the Parthenon, for the purposes that we require, as the *Constitution* or the *Pennsylvania* is to the galley of the Argonauts." (Page 61.)

Greenough often expressed great admiration for the Greek

masters of art and architecture, and when he advocated functional architecture he did so in the name of Greek principles. The principles of Greek architecture were to Greenough the same as his universal principles of functional design. He stated that the men who designed the yacht "America" and the trotting wagon were nearer to Athens than those who would bend the temple to every use or mask the chaos of ill-arranged, ill-lighted, and stifled rooms behind the copy of a Greek façade.

Greenough did not advocate the revival of any *one* historic style. We should create our own style.

> The fundamental laws of building found at the basis of *every* style of architecture must be the basis of ours. The adaptation of the forms and magnitude of structures to the climate they are exposed to, and the offices for which they are intended, teach us to study our own varied wants in these respects. The harmony of their ornaments with the nature that they embellished, and the institutions from which they sprang, calls on us to do like justice to our country, our government, and our faith. As a Christian preacher may give weight to truth, and add persuasion to proof, by studying the models of pagan writers, so the American builder by a truly philosophic investigation of ancient art will learn of the Greeks to be American. (Pages 66, 67.)

Greenough's inclination was toward nature first—then toward Greece. "Let us consult nature, and in the assurance that she will disclose a mine richer than was ever dreamed of by the Greeks." (Page 57.) The greatness of Greek artists was due to their ability to learn lessons taught by nature. Their greatness was a reflection of her glory.

We now come to the problem of the ornamentation of almost all historic styles. How did Greenough reconcile the almost universal presence of ornament with the principle "beauty is the promise of function"? Did not the Greeks embellish with sculpture their most austere temples?

Greenough admitted of two legitimate approaches to

architecture: organic and monumental. Organic buildings are "formed to meet the wants of their occupants. . . . The laws of structure and apportionment, depending on definite wants, obey a demonstrable rule. They may be called machines." Monumental buildings are "addressed to the sympathies, the faith, or the tastes of a people." They are "bound by no other laws than those of the sentiment which inspires them, and the sympathies to which they are addressed." They "occupy the positions and assume the forms best calculated to render their parent feeling. No limits can be put to their variety; their size and richness have always been proportioned to the means of the people who have erected them." (Pages 64, 65.) These two great classes of buildings, the organic and the monumental, are not always separate and distinct. The ideas are sometimes joined or mixed in the same building.

Greenough continued:

> In all remarks upon important public edifices there is a twofold subject under contemplation: first, the organic structure of the works; second, their monumental character. To plant a building firmly on the ground; to give it the light that may, the air that must, be needed; to apportion the spaces for convenience, decide their size, and model their shapes for their functions—these acts organize a building. . . . The monumental character of a building has reference to its site—to its adaptation in size and form to that site. It has reference also to the external expression of the inward functions of the building—to adaptation of its features and their gradation to its dignity and importance; and related, moreover, to that just distinction which taste always requires between external breadth and interior detail. (Pages 20, 21.)

Monumental buildings are likely to be adorned with sculpture, but sculpture should be subordinate to the building which is adorned. Architectural sculpture should be organic in nature. Greenough saw in the pure Doric temple a confirmation of the doctrine of strict adaptation. He felt

that the sculptures had an organic relation to the functions of the edifice;

> They took possession of the worshipper as he approached, lifted him out of everyday life, and prepared him for the presence of the divinity within. . . . The world has never seen plastic art developed so highly as by the men who translated into marble, in the tympanum and the metope, the theogeny and the exploits of the heroes. Why, then, those columns uncarved? Why, then, those lines of cornice unbroken by foliages, unadorned by flowers? Why that matchless symmetry of every member, that music of gradation, without the tracery of the Gothic detail, without the endless caprices of arabesque? Because those sculptures *spake,* and speech asks a groundwork of silence and not of babble, though it were of green fields. (Pages 123, 124.)

I have presented Greenough's theory of beauty and his point of view toward architecture. Portions of Greenough's essays are criticisms of specific buildings in which he applies his theory. He was severe in his criticism of the lack of functionalism in the buildings and landscape architecture in Washington. Criticizing the high-relief sculpture in the tympanum of the Capitol building, he wrote, "it is the translation of rhetoric into stone—a feat often fatal to the rhetoric always fatal to the stone." (Page 19.) Greenough compared the effect of crowding a modern building into the form of a temple (such as Thomas Jefferson's model of the Maison Carrée for the State House at Richmond) to the effect produced by an African king, "standing in mock majesty with his legs and feet bare, and his body clothed in a cast coat of the Prince Regent." (Page 63.) He described Mill's original design for the Washington Monument which was to be an obelisk surrounded at the base by a circular Doric colonnade as "the intermarriage of an Egyptian monument . . . with a Greek structure . . . corrupting and destroying the special beauties and characters of the two elements." (Page 23.) Greenough's criticism of contemporary buildings was se-

verely unfavorable, but it was always the result of the application of a few clearly stated principles in which he sincerely believed.

Greenough did not acknowledge the sources of his ideas, but there are essays and parts of essays dealing with the theoretical writings of other critics. There is one criticising Edmund Burke's theory of beauty. William Hogarth's line of beauty also received lengthy condemnation. There are also some critical remarks about Sir Joshua Reynold's ideas on art. When one reads Greenough's criticism of these men one gets the impression that their ideas are far removed from those of Greenough. However, upon reading these authors one discovers points of similarity. Greenough is regarded today as an original thinker, though not as a scholar. He is regarded as a precursor of Louis Sullivan and Frank Lloyd Wright. It is true that Greenough's thinking was characterized by an unusually persistent stress upon the idea of adaptation of art forms to functions, but as a matter of fact throughout the eighteenth century, writers turned their attention to the aesthetic effect of fitness and a comparison of the idea of structure in nature and art. This applies to the writings of George Berkeley, Francis Hutcheson, David Hume, Uvedale Price, Archibald Alison and Payne Knight, as well as of Reynolds, Burke, and Hogarth.[5]

Burke's *Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful* was originally published in 1757. In this essay, the author inquired into the nature of taste and beauty and discussed the qualities in objects which he thought were the cause of their beauty. According to Burke, beauty is neither a separate faculty of the mind nor an instinct. He stated: "beauty is for the greater part, some quality in bodies acting mechanically on the human mind by the intervention of the senses."[6] Thus he offered a psycho-

logical explanation of beauty (albeit a crude one) in contrast to Greenough's theological explanation. Burke found beautiful objects small. (Sublime is his word for the beauty of vastness.) Smoothness is another quality of beautiful objects. Gradual variation (that is, the absence of monotonous, brutal, or awkward parts) is another. Delicacy of form (that is, just the right amount of strength and mass, neither too much nor too little) is another. Clear, clean, and mild (that is, harmonious) color is another quality. Burke thus excluded fitness as a quality of beautiful objects, *but* he did *not* say that fitness is of no value in a work of art. He stressed the principle that good proportion is a result of fitness. In fact, he maintained that there is no other way of achieving good proportion save by forming objects so as to achieve fitness for function. But proportion and beauty are separate concepts in Burke's theory. Proportion elicits the cold approbation of reason. Beauty elicits a warmer response. In his chapter on "The Real Effect of Fitness," Burke wrote:

> When I excluded proportion and fitness from any share in beauty, I did not, by any means, intend to say that they were of no value, or that they ought to be disregarded in works of art. Works of art are the proper sphere of their power; and here it is that they have their full effect. . . . The effect of proportion and fitness, at least so far as they proceed from a mere consideration of the work itself, produces approbation, or the aquiescence of the understanding, but not love, nor any passion of that species. . . . In beauty, as I said, the effect is previous to any knowledge of use; but to judge of proportion, we must know the end for which any work is designed. According to the end the proportion varies. . . . Good sense and experience, acting together, find out what is fit to be done in every work of art. We are rational creatures, and in all our works we ought to regard their end and purpose; the gratification of any passion, how innocent soever, ought to be of secondary consideration. Herein is placed the real power of fitness and proportion; they operate on the understanding considering them, which *approves* the work, and acquiesces in it.[7]

Greenough ignored Burke's discussion of the importance of fitness but devoted an essay to an attack on his theory of the physical characteristics of beautiful objects. Greenough argued that qualities such as smoothness, smallness, gradual variation, delicacy, and color are relative qualities. They must be interpreted organically. For example, you cannot transfer the smoothness of marble to the smoothness of the human skin or the smoothness of the eyeball. Each is a different kind of smoothness. Furthermore, the quality of delicacy praised by Burke when interpreted organically according to Greenough, "cannot mean anything more . . . than a normal and healthy apportionment of means to ends." Color must also be a relative quality when interpreted organically. "The color of the lips is as beautiful as the absence of color in the teeth." Greenough concluded: "That which is fitted to one relation is therefore *unfitted* for another and different relation. That which is beautiful in one connection is *therefore* deformed in another and different connection. To deal with relative elements as if they were positive is to insure discord and disorganization."[8]

Turning to Hogarth, Greenough limited his criticism to Hogarth's line of beauty, a graceful, moving s-curve. As in his criticism of Burke's characteristics, Greenough applied the principle of organic analogy. He wrote:

> Hogarth's ingenious plea for his line of beauty holds good with regard to the spinal column and the necks of long-necked birds and beasts. It is the line of moving water, of flowing draperies, and of many pleasing vegetable forms; but if we drop from the flank of the horse, where we find it, to the shank which is thin, straight and hard, we get a new sense of beauty, and not a sacrifice thereof. With Hogarth's formula in hand, we must accept the vagaries of Bernini and condemn the Greek peristyle and pediment. This famed line is truly indicative of motion, of the double element of inertia or resistance on the one hand and of a moving power on the other. From its inevitable significance and uniformity of

> expression, it becomes monotonous by repetition, incongruous and impertinent wherever such a double action is out of place. Transfer the waving line of a horse's flank to his metatarsal bone, and you have a cripple. Transfer the double curve of a swan's neck to his bell, and you have an impotent and therefore ridiculous arrangement. (Pages 97, 98.)

By selecting Hogarth's line of beauty for separate criticism, Greenough did less than justice to a great artist and competent theorist. In his *Analysis of Beauty,* first published in 1753, Hogarth attempted to fix the fluctuating ideas of taste. The problem of taste was a vital one in the eighteenth century. Taste had been freed from the shackles of academic authority but the revolution had gone to the opposite extreme and many writers on art now sought to determine whether taste was anything more than merely fluctuating and personal.

In his introduction, Hogarth stated his purpose: "I shall now proceed to consider the fundamental principles, which are generally allowed to give elegance and beauty, when duly blended together, to compositions of all kinds whatever. . . . These principles . . . are fitness, variety, uniformity, simplicity, intricacy, and quality;—*all of which cooperate in the production of beauty, mutually correcting and restraining each other occasionally.*"[9] Thus we see at once the true breadth of scope of Hogarth's analysis. The line of beauty is only an incident and not the sum and substance of Hogarth's theory.

In truth, Hogarth's ideas on the subject of the relation of form, function and beauty, which he developed a century before Greenough, in many respects anticipated the latter. Hogarth used the term "fitness," which was popular among early eighteenth-century writers, whereas Greenough used the expression "adaptation of forms to functions," which was common in biological literature in the late eighteenth and

early nineteenth century, but both expressed the same general concept. Hogarth wrote: "Fitness of the parts to the design for which every individual thing is formed, either by art or nature, is first to be considered, as it is of the greatest consequence to the beauty of the whole."[10] He condemned twisted columns because they conveyed an idea of weakness inappropriate to a structural support.

According to Hogarth,

> The bulks and proportions of objects are governed by fitness and propriety. It is this that has established the size and proportion of chairs, tables, and all sorts of utensils and furniture. It is this that has fixed the dimensions of pillars, arches, etc. for the support of great weight, and so regulated all the orders in architecture, as well as the sizes of windows and doors, etc. Thus, though a building were ever so large, the steps of the stairs, the seats in the windows, must be continued of their usual heights, or they would lose their beauty with their fitness: and in ship-building the dimensions of every part are confined and regulated by fitness for sailing. When a vessel sails well, the sailors call her a *beauty*; the two ideas [fitness and beauty] have such a connection![11]

Hogarth then observed that "the general dimensions of the parts of the human body are adapted to the uses they are designed for." This principle applies to all forms of life. Hogarth argued that both the race horse and the war horse are beautiful types whose forms are adapted to their functions but whose proportions cannot be interchanged without destroying their beauty. He compared them with the figures of Mercury and Hercules, and concluded that to "interchange parts would disgust and deform, instead of adding beauty; *because* the judgment would condemn it as unfit."[12]

Hogarth did not live in an age of efficient machines; hence he does not express great admiration for their fitness and beauty. His admiration was for the "living machines of nature," and he contrasted with them the poor ones men are

capable of making. To illustrate this he described a clock made by a Mr. Harrison, by the government's order, for the keeping of true time at sea. The clock was awkward in form and contained apparently superfluous parts. "But," exclaimed Hogarth, "in nature's machines, how wonderfully do we see beauty and use go hand in hand!"[13]

Thus we see that Hogarth believed fitness to be the most important factor in the creation of beautiful objects. Hogarth anticipated Greenough in his admiration for the functional beauty of nature's forms and in his admiration for the beautiful fitness of perfected man-made objects such as the sailing vessel. He did not, like Greenough, identify beauty with fitness to the point of saying that fitness alone is the cause of beauty.

Greenough's criticism of Sir Joshua Reynolds was for his alleged suppression of Gainesborough and Wilson. To Greenough, Reynolds was a symbol of the point of view of the Academy, and Greenough was too democratic to approve of academic dictatorship in art.

Reynolds delivered his famous lectures to the Royal Academy between 1769 and 1786. In them he presented his point of view toward art. Reynolds paid very little attention to the effect of fitness upon architectural form. His point of view was that of a painter, and he did regard the effect of fitness upon the proportions of the human body. However, it is Reynolds' view of nature that is of particular interest to our present analysis. Roger Fry has called attention to the three ways in which Reynolds used the word "nature."[14] He used it, (1) in the ordinary sense in which artists used the word: as the sum of visible phenomena not made by artifice. (2) It is used in the Aristotelian sense as an immanent force working in the refractory medium of matter towards the highest perfection of form. (3) Nature is not only what nature pro-

duces, or what nature strives to produce, but whatever is agreeable to the affections and predispositions of the mind. "In short," Reynolds stated, "whatever pleases has in it what is analogous to the mind, and is, therefore, in the highest and best sense of the word, natural." In another context, Reynolds stated: "The terms beauty, or nature, which are general ideas, are but different modes of expressing the same thing."

Nature, then, was for Reynolds as for Greenough, the great source of inspiration and guidance. For the former, nature's archetypes (or the forms she strives to attain) are the perfect models of beauty. Reynolds conceded that nature sometimes produces a deformity and often falls short of perfection, but perfect beauty, he maintained, is more common in nature than deformity. Greenough as we have seen, ignored the fact that nature occasionally produces deformity. He did not recognize that possibility when he presented his arguments. Obviously, the exceptional case meant less to Greenough than the general rule. The real difference between the two views of nature is that Greenough attributed nature's beauty to the principle of strict adaptation of forms to functions, whereas to Reynolds, beauty for each species was embodied in a perfect archetype existing in the mind of the Creator and toward which the species was striving. Obviously, Reynolds' perfect archetype functioned perfectly, but this was not singled out by Reynolds as the cause of beauty.

Another possible contributor to Greenough was his friend and patron, James Fenimore Cooper, whose novel, *Home as Found*, published in 1838, contains ideas on architecture similar to those of Greenough. Cooper wrote contemptuously of the fashion for building little Greek temples for American churches, banks, taverns, court-houses, and dwellings. The character Aristabulus Bragg announces: "A friend of mine

has just built a brewery on the model of the Temple of the Winds."[15] Cooper also wrote in the same book:

> The fault just now is perhaps to consult the books too rigidly, and to trust too little to invention; for no architecture, and especially no domestic architecture, can ever be above reproach, until climate, the uses of the edifice, and the situation, are respected as leading considerations. Nothing can be uglier *per se*, than a Swiss cottage, or anything more beautiful under its precise circumstances. As regards these mushroom temples which are the offspring of Mammon, let them be dedicated to whom they may, I should exactly reverse the opinion and say, that while nothing can be much more beautiful, *per se*, nothing can be in worse taste than to put them where they are.[16]

These brief quotations from Cooper are enough to reveal his point of view. The parallel with Greenough is too obvious to warrant clarification, but it must remain a parallel until it can be proven that Greenough learned from Cooper, or Cooper learned from Greenough.

A more certain direct influence upon Greenough was Ralph Waldo Emerson. It now appears that Greenough and Emerson helped each other to develop theories of architectural beauty. From Emerson's *English Traits*, we learn of his first meeting with Greenough in 1833 during Emerson's tour of Italy: "At Florence, chief among artists, I found Horatio Greenough, the American sculptor. . . . Greenough was a superior man, ardent and eloquent, and all his opinions had elevation and magnanimity. . . . He was a votary of the Greeks and impatient of Gothic art."[17] At this time, according to Emerson's account, Greenough expounded to him his theory of architecture. In this year, 1833, Emerson was only twenty-nine years old. We learn from his biographical writings that he was more interested in men and associations than art. It is true that he was impresed by the great church of St. Peter in Rome and the Cathedral of Milan, but his ideas on archi-

tecture, he admits, were vague and incomplete. Emerson's contact with Greenough in 1833 encouraged him to think further along the same lines. As time passed, Emerson became very much interested in art and especially in architecture. He developed a profound organic theory of architecture. By 1852, the year of Greenough's death, his friendship with Emerson was so strong that the two exchanged many letters on the subject of art and architecture, and Greenough visited Emerson at Concord. Greenough was preparing his essays for publication in book form. At this time, Emerson seems to have been the master and Greenough the pupil.

Emerson's ideas on art and architecture are scattered in numerous writings. Regis Michaud, in his book, *L'esthétique d'Emerson,* published in 1927, gave us the results of the first thorough study of Emerson's aesthetic theory. The most recent book on the subject is Vivian C. Hopkin's *Spires of Form,* published this year by the Harvard University Press. There have been a number of scholarly magazine articles on the subject.[18]

Emerson, in 1841, developed his ideas on the "metaphysics" of architecture in an article which appeared in *The Dial.*[19] Emerson bridged the gap between the Aristotelian view of art and nature held by Sir Joshua Reynolds and the functionalist viewpoint of Greenough. He maintained that the soul is subservient to the Universal Mind, and that therefore art, which is the creation of the soul, is strictly dependent upon nature, which is the Universal Mind's representative. The division of nature into the two aspects—material and ideal—led Emerson to the formulation of two interesting doctrines, as follows:

Since art is subservient to the material aspect of nature, it follows that works of art must conform to natural laws. This conformation applies especially to architecture. One

cannot build as he wishes, but as he must. "It is only within narrow limits that the discretion of the architect may range. Gravity, wind, sun, rain, the size of men and animals, and such like, have more to say than he."[20] In other words, form is largely determined by material properties and physical laws. The architect cannot get free of this material basis, but on the other hand, such things as the mass of a building or the materials used can actually be a source of pleasure.

Since art is also subservient to nature in its ideal aspect, works of art will be expressions of the Universal Mind that formed nature, and therefore must be based on reason and necessity. Emerson wrote:

> Arising out of eternal reason, one and perfect, whatever is beautiful rests on the foundation of the necessary. . . . Fitness is so inseparable an accompaniment of beauty, that it has been taken for it. The most perfect form to answer an end is so far beautiful. . . . We feel, in seeing a noble building, which rhymes well, as we do in hearing a perfect song, that it is spiritually organic, that is, had a necessity in nature for being, was one of the possible forms in the Divine mind, and is now only discovered and executed by the artist, not arbitrarily composed by him.[21]

Emerson's view of art and nature resembles Aristotle's view in many respects. He seems to have combined ideas derived from Plato and the Neo-Platonists as well as Aristotle. But the first two named sources had their greatest influence on Emerson's interpretation of the nature of the Creative process, which does not form a part of our present analysis. It appears that Aristotle was the richest source from which Greenough, Emerson, and the eighteenth-century writers drew.

Aristotle regarded architecture as, above all, a practical or useful art. He regarded the art of architecture in the same light as the art of teaching or the practice of medicine. In this practical point of view he followed the prevailing con-

temporary point of view of his countrymen who linked architecture to the practical world. It sprang out of the needs of personal, civic, and religious life, and the greatest triumphs of the art were connected with public faith and worship.

Aristotle observed that all forms of art have a common denominator in nature. In a special sense, art *imitates* nature. The distinction between different forms of art lies first in what is selected for "imitation," second, the method of "imitation," and third, the end or purpose of the art form. In connection with Sir Joshua Reynolds and Ralph Waldo Emerson, I spoke of the Aristotelian view of nature. Aristotle frequently used the term "nature" to denote the laws, the creative forces, the productive principles of the universe, and not the outward appearances of things. He used the term "imitation" with various shades of meaning to denote the processes of completing nature's purposes, aiding her to do her work or realize her goals, or imitating nature's methods. When Aristotle said art imitates nature, he meant that art has, like nature, certain ends in view, and in the adaptation of means to ends catches hints from nature.

In *De Partibus Animalium,* Aristotle demonstrated how the higher we ascend the scale of being through insect and animal to human existence, the more does nature need assistance in carrying out her designs. Man, who is her highest creation, she brings into the world more helpless than any other animal,—unshod, unclad, and unarmed. But, Aristotle reasoned, in his seeming imperfection lies man's superiority, for the fewer the finished appliances with which he is provided, the greater is the demand for intellectual effort. By means of the rational faculty of art, with which nature has endowed him richly, man is able to come to her aid, and in ministering to his own needs to fulfill her uncompleted purposes. Where from any cause nature fails, art steps in. Nature aims at pro-

ducing health; in her restoration processes we observe an instinctive capacity for self-curing. But she does not always succeed, and the art of the physician makes good the defect. He discovers one of the links of the chain which terminates in health, and uses nature's own machinery to start a chain of reactions which lead to the desired result. In the *Politics,* Aristotle maintained that nature had formed man to be a political animal. Family and tribal organization are stages on the way to a more complete existence, and man has now reached an order of community living called the state. The state, Aristotle asserted, is a natural institution which requires the political art to organize it and to realize nature's full idea. He who would be a master in any art must first discern the true end by a study of nature's principles, and then employ the method which she suggests for the attainment of that end. Useful art supplants nature, and at the same time follows her guidance.

Aristotle did not distinguish between fine and useful art. In sculpture, painting, and architecture as well as in medicine, the principle of the art is to complete in some sense the work of nature. Medicine imitates the *methods* of nature in achieving her goals, but in the arts of sculpture or painting it is not the *method* of nature but the *goal* which is imitated. Imitation in this sense is not merely a mechanical reproduction; it is a creative act. In his book entitled *Aristotle's Theory of Poetry and Fine Art,* Samuel Henry Butcher paraphrases Aristotle's theory of creative imitation as follows: "It is the expression of the concrete thing under an image which answers to its true idea. To seize the universal, and to reproduce it in simple and sensuous form is not to reflect a reality already familiar through sense perception; rather it is a rivalry of nature, a completion of her unfulfilled purposes, a correction of her failures."[22] Thus we see that all the

arts have the same general function or purpose. Greenough adopted a similar point of view. His definition of beauty as "the promise of function" was meant to apply to all forms of art, and he instructed *all* artists to seek in nature the principles of art. To Greenough, the principles above all which the artist should seek in nature were structure and organization—God's way of speaking to us—"God's utterance."

Greenough's admiration for the functional beauty which he found in even the humblest creatures is also to be found in Aristotle. In *De Partibus Animalium,* Aristotle pointed out that some of the humbler members of nature's kingdom may appear mean if taken singly and judged by the impression they make on the senses. However, their true beauty and significance are visible to the eye of reason, which looks not to the material elements or to the isolated parts but to the structure of the whole. In her structural faculty lies nature's perfection. With her, the attainment of the end "holds the place of the beautiful."

Another instance of the analogy of the organic and the beautifuul can be found in the *Metaphysics,* wherein Aristotle defined artistic "wholeness" or unity in organic terms. The parts which constitute an artistic whole must be inwardly connected, arranged in a certain order, structurally related, and combined into a system. A whole is not a mere mass or sum of external parts some of which may be omitted without perceptibly affecting the rest. It is a unity which is unfolded and expanded according to the laws of its own nature, an organism which develops from within.

In the *Poetics,* Aristotle applied the theory of organic unity to the literary arts. The idea of an organism underlies all of Aristotle's ideas about unity. It is tacitly assumed as a first principle of art, and in one passage is expressly mentioned as that from which the rule of epic unity is deduced. "The

plot must as in a tragedy be dramatically constructed; it must have for its object a single action whole and complete, with a beginning, a middle, and an end, *that like a single living organism* it may produce its appropriate pleasure."[23]

Thus we see that while Aristotle gave us no theory of beauty in architecture, he did give us a theory of art which undoubtedly was intended to include architecture. His point of view toward architecture was organic and functionalistic. In general this point of view is the basis of eighteenth-century architectural theory and it comes down into the nineteenth-century writings of Emerson and Greenough.

We may summarize as follows the basic differences between Greenough and the others we have noted who were theorizing in the Aristotelian tradition: The eighteenth-century writers saw that something akin to beauty was produced by those forms which were perfectly adapted to their functions. However, this appeal is to the rational faculty in man. There is another aspect to aesthetic enjoyment, a warmer, more emotional type of pleasure which we experience in the presence of certain forms or qualities of form. Emerson, like the eighteenth-century writers, saw fitness as a source of a high type of rational pleasure so close to beauty that it has been taken for it. Greenough closed the gap between fitness and beauty. To Greenough, the perception of beauty could be explained in terms of a God-implanted instinctive response to those forms which promise to function according to God's laws of organization.

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NOTES

1. Horatio Greenough, *Form and Function: Remarks on Art by Horatio Greenough*, edited by Harold A. Small with an introduction by Erle Loran (Berkeley and Los Angeles: University of California Press, 1947), p. 4, 5. Subsequent page references to this edition will appear parenthetically in the text.

2. At the present time there is no full-length biography of Greenough. However, there are a number of references to him in books and articles. Those persons who wish to extend their acquaintance with Greenough should consult the works listed in the Bibliographical Appendix of Mr. Small's edition of Greenough's essays. In addition I suggest the essay on Greenough in F. O. Matthiessen's *American Renaissance* (London, Toronto and New York: Oxford University Press, c. 1941), pp. 140-152, and the portions on Greenough in Vivian C. Hopkins, *Spires of Form* (Cambridge: Harvard University Press, 1951), pp. 89-92 and 102.
3. Bernhard Berenson, *The Venetian Painters of the Renaissance,* 3rd ed. (New York and London: G. P. Putnam's Sons, 1911), p. vii. I would substitute "aspect" for "epoch."
4. Edward Lacy Garbett, *Rudimentary Treatise on the Principles of Design in Architecture as Deducible from Nature and Exemplified in the Works of the Greek and Gothic Architects* (London: J. Weale, 1850), a once popular volume, No. 18 in Weale's "Rudimentary" series. The writings of John Ruskin contain frequent reference to moral values as the basis for architectural criticism, but the chief sources are *Seven Lamps of Architecture* and *The Stones of Venice.* Ruskin wrote the *Seven Lamps* in the autumn of 1848 after a tour of Amiens and Normandy. The seven "lamps" were: sacrifice, truth, power, beauty, life, memory, and obedience. *The Stones of Venice,* first published 1851-1853, presents moral lessons deduced from the history of Venice as recorded in her monuments. "The Virtues of Architecture" (volume I, chapter II) is a lucid and convincing exposition of Ruskin's moralist viewpoint. Herein the three branches of architectural virtue are described as the duty of a building to, (1) act well, (2) speak well, and (3) look well.
5. It would require an extensive bibliography to include all eighteenth-century writings dealing with the idea of fitness. Of the group of authors I have listed, Berkeley and Hume placed greatest relative stress on the idea of fitness. Berkeley's functionalistic point of view toward architecture appears in *Alciphron,* first published in Dublin in 1732, an argument in dialogue form against atheism and free-thinking. References to aesthetics are scattered throughout the philosophical writings of David Hume (1711-1776). He was primarily interested in the problem of morality. His utilitarian position led him to distinguish between the merely useful and the socially beneficial.
6. Edmund Burke, *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful with an Introductory Dis-*

course Concerning Taste, adapted to popular use by Abraham Mills (New York: Harper and Brothers, 1860), p. 141.

7. *Ibid.* pp. 133-135.
8. Greenough's essay on Burke appears in *Form and Function,* pp. 87-95.
9. William Hogarth, *The Analysis of Beauty* (London: Samuel Bagster, n.d.), pp. 47, 48.
10. *Ibid.* p. 49.
11. *Ibid.* pp. 50, 51.
12. *Ibid.* p. 52.
13. *Ibid.* p. 129.
14. Sir Joshua Reynolds, *Discourses, Delivered to the Students of the Royal Academy,* with introductions and notes by Roger Fry (London: Seeley and Company, Limited, 1905), pp. 39, 40.
15. *Form and Function,* p. 54 n.
16. *Ibid.* p. 66 n.
17. From Emerson's *English Traits,* as quoted in *The New Path,* II (1865), p. 136.
18. I am especially indebted to the article by Robert B. Shaffer, "Emerson and His Circle: Advocates of Functionalism," *Journal of the Society of Architectural Historians,* Vol. 7, Nos. 3-4 (July-December, 1948), pp. 17-20.
19. Ralph Waldo Emerson, "Thoughts on Art," *The Dial,* I (1840-1), pp. 367-378.
20. *Ibid.* p. 369.
21. *Ibid.* p. 375.
22. Samuel Henry Butcher, *Aristotle's Theory of Poetry and Fine Art* (London and New York: Macmillan and Co., 1895), p. 144.
23. *Ibid.* p. 176.